

Name _____

Logistic Population Growth

Show all of your work! Don't round until the end. Round your final answer the nearest thousandth, and then circle your final answers.

$$\frac{\frac{dN}{dt}}{\frac{dN}{dt}} = r_{\max} N \frac{(K - N)}{K}$$

1. Take a population with 5672 members with $r_{\max} = 0.031$ in an environment whose carrying capacity is 30,000. What will its rate of population growth be?
2. Take the population in the preceding question in an environment whose carrying capacity is 15,000. What will its rate of population growth be?
3. Take the population in the preceding question in an environment whose carrying capacity is 7,000. What will its rate of population growth be?
4. Take the population in the preceding question in an environment whose carrying capacity is 4,000. What will its rate of population growth be?

5. Compare two populations:

Population A with 239 members, $r_{\max} = 0.044$, in an environment with a carrying capacity of 800

Population B with 683 members, $r_{\max} = 0.044$, in an environment with a carrying capacity of 1,450.

Which will have a higher rate of population growth? (Show your work!)

6. Compare two populations:

Population A with 331 members, $r_{\max} = 0.027$, in an environment with a carrying capacity of 900

Population B with 729 members, $r_{\max} = 0.027$, in an environment with a carrying capacity of 1,600.

Which will have a higher rate of population growth? (Show your work!)

7. Compare two populations:

Population A with 821 members, $r_{\max} = 0.038$, in an environment with a carrying capacity of 1,200

Population B with 372 members, $r_{\max} = 0.038$, in an environment with a carrying capacity of 600.

Which will have a higher rate of population growth? (Show your work!)